

REMARKS

Claims 1-13 and 17-38 are pending. Applicants respectfully submit that no new matter has been introduced. Reexamination and reconsideration of this application are respectfully requested.

In the May 10, 2005 Final Office Action, claims 1-13 and 17-38 were rejected under 35 U.S.C. §102(e) as being anticipated by U.S. Patent No. 5,936,949 to Pasternak (“Pasternak”). This rejection is respectfully traversed.

U.S. Patent No. 5,936,949 to Pasternak

The Examiner alleges that Pasternak discloses a layered protocol stack where data packets are processed on an upper protocol layer and the processing is controlled according to at least one timer of the upper protocol layer. The Office Action also states that Pasternak discloses that the transmission is controlled by the lower protocol layer and is performed with variable access delays. The Office Action further states that Pasternak discloses detecting the start of a transmission on the lower protocol layer, notifying the upper protocol layer by the lower protocol layer when the transmission is started, and synchronizing at least one timer of the upper protocol layer according to the notification.

The Examiner contends that the following passage from Pasternak discloses (a) the detection of the start of the transmission, (b) notifying the upper protocol layer by the lower protocol layer when a transmission is started, and (c) synchronizing at least one timer of the upper protocol layer according to the notification:

“[a subscriber terminal] maintains a timer that is cleared after every cell it transmits (with queue status indicating more cells waiting). If the timer expires, the ST selects a minislot at random and performs the START3 protocol from the same minislot position in future transmissions. Upon receiving a grant, the [subscriber terminal] stops contending until the next timer expiration.”

Col. 9, lines 23-30.

Claims 1, 2 and 17-27

Independent claim 1 recites (with emphasis added):

1. A method of improving transmission efficiency in a communication system with a layered protocol stack, wherein data packets are processed on an upper protocol layer; the processing is controlled according to at least one timer of the upper protocol layer; the data packets are forwarded to a lower protocol layer for transmission, the transmission is controlled by the lower protocol layer, and the transmission is performed with variable channel access delays, the method comprising:
 - detecting the start of a transmission by the lower protocol layer;
 - notifying the upper protocol layer by the lower protocol layer when a transmission is started; and
 - synchronizing at least one timer of the upper protocol layer according to the notification.

Pasternak discloses a wireless point-to-multipoint Asynchronous Transfer Mode ("ATM") metropolitan area network that uses a layered protocol stack. Although Pasternak mentions use of a timer by a subscriber terminal in the passage cited by the Examiner above, Pasternak does not disclose, teach or suggest that the timer is located within *the upper protocol layer* as required by claim 1.

Moreover, Applicants further note that Pasternak fails to disclose, teach or suggest the detection of *the start of a transmission by the lower protocol layer*. The Examiner alleges that "the end of the transmission of a cell may be equivalent in time to the start of transmission of another cell." [Office Action, p. 2-3.] Applicants disagree and note that the end of transmission of a cell could occur before that start of transmission of a second cell. Therefore, the end of the transmission of a cell is *not equivalent* in time to the start of transmission of another cell. Accordingly, Pasternak fails to disclose, teach, or suggest *detecting the start of a transmission by the lower protocol layer*.

Moreover, Pasternak fails to disclose *notifying the upper protocol layer by the lower protocol layer when a transmission is started synchronizing at least one timer of the upper protocol layer according to the notification*. The Examiner contends that "there must be some sort of notification to know when to clear the clock, and since the clock is cleared, it is synchronized." [Office Action, p. 3.] However, Pasternak does not teach that the *upper protocol layer is notified* by the lower protocol layer when the transmission is started. Moreover, Applicants disagree with the Examiner's contention that there must be some

notification between the layers. Specifically, Pasternak discloses a network that does not use a variable channel access delay. Without a variable channel access delay, a notification is unnecessary because the upper layer can rely on the fact that the transmission is performed after the usual processing delay of the lower layer.

Moreover, Applicants note that the Examiner contends that “the transmission is **done** by the lowest layer.” [Office Action, p. 3; *emphasis added.*] However, claim 1 specifies only that the processing is *controlled* according to at least one timer of the upper protocol layer, not *done* by the lowest layer.

Accordingly, independent claim 1 distinguishes over Pasternak. Claim 2 depends from claim 1 and therefore also distinguishes over Pasternak. Claims 17-27 contain similar limitations (either directly or through claim dependencies) and therefore also distinguish over Pasternak.

For the reasons discussed above, Applicants respectfully submit that the rejection of claims 1, 2, and 17-27 under 35 U.S.C. §102(e) should be withdrawn.

Claims 3-13 and 28-38

Claim 3 recites (with emphasis added):

3. A method of improving the transmission efficiency in a communication system with a layered protocol stack, wherein data packets are processed on an upper protocol layer and are forwarded to a lower protocol layer controlling the transmission, **transmissions are performed with a channel access delay**, and at least one of the layers performs a scheduling of data packets for the transmission, comprising:
 - scheduling of first data packets for transmission;
 - detecting a channel access delay on the lower layer;**
 - performing a check is performed to determine whether additional data packets are ready for forwarding to the lower layer at or before the end of the channel access delay;**
 - performing a further scheduling of the first and additional data packets;**
 - and**
 - transmitting the data packets according to the further scheduling.**

As discussed above with respect to claim 1, Pasternak does disclose use of a subscriber terminal that maintains a timer that is cleared after every cell it transmits (with queue status indicating more cells waiting). However, Pasternak does not disclose, teach or suggest a

method where transmissions are performed with a channel access delay, including (a) detecting a channel access delay on the lower layer, (b) **performing a check is performed to determine whether additional data packets are ready for forwarding to the lower layer at or before the end of the channel access delay; (c) performing a further scheduling of the first and additional data packets; or (d) transmitting the data packets according to the further scheduling.**

Pasternak does not disclose teach or suggest any such performing of a check or scheduling as required by claim 3. Accordingly, claim 3 distinguishes over Pasternak. Claims 4-13 depend from claim 3 and therefore also distinguish over Pasternak. Claims 28-38 contain similar limitations (either directly or through claim dependencies) and therefore also distinguish over Pasternak.

For the reasons discussed above, Applicants respectfully submit that the rejection of claims 3-13 and 28-38 under 35 U.S.C. §102(e) should be withdrawn.

CONCLUSION

Applicants believe that the foregoing amendments place the application in condition for allowance, and a favorable action is respectfully requested. If for any reason the Examiner finds the application other than in condition for allowance, the Examiner is requested to call the undersigned attorney at the Chicago telephone number (312) 425-3900 to discuss the steps necessary for placing the application in condition for allowance should the Examiner believe that such a telephone conference would advance prosecution of the application.

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Respectfully submitted,

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